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*Published to advance the Science of cold-blooded vertebrates*

## NOTES ON THE FOOD OF CAROLINA SHARKS

In July and August, 1920, through the courtesy of Dr. Russell J. Coles and the Ocean Leather Company, J. C. Bell spent some weeks at Morehead City, North Carolina, making a collection of plaster moulds of sharks and rays for the American Museum of Natural History. Certain incidental notes made on the sharks are sufficiently interesting to warrant placing them on record.

Nurse Shark (*Ginglymostoma cirratum*). A female, 8 ft. 6 $\frac{1}{2}$  inches in total length (weight 370 lbs.) was taken on July 22, and a male of 8 ft. 4 inches (weight 332 lbs.) on August 13. The stomachs of both contained a large amount of squid or inkfish, and that of the latter also a little partially digested shrimp.

The female contained 28 developed eggs, about as large as a goose's egg with a delicate horny shell, 14 on each side. Above these were a large number of smaller eggs ranging from the size of a pea to that of a large-sized marble. This shark showed great tenacity of life, living four or five hours after being taken from the water.

Cub Shark (*Carcharhinus commersonii*). The stomach contents of a number of large Cub Sharks taken in the nets showed great variety, and a general similarity to that of the Tiger Shark. On July 13 two were taken which had fed on smaller Black-tip

Sharks (*C. limbatus*), in the net with them. On August 9 a very large male (length 10 ft., weight about 400 lbs.) contained pieces of Small Devil-fish (*Mobula*). One, when sections of it were assembled, was found to have been bitten in five pieces. August 13, two Cub Sharks each contained shad. In one was also the fin of a porpoise, and in the other a part of a Small Devil-fish and several crabs and digested crab remains. Six Cub Sharks, August 18, contained shad, crabs and mackerel (*Scombridae*).

Tiger Shark (*Galeocerdo tigrinus*). The stomach of an 11 ft. 3 in. female weighing 636 lbs., July 9, contained a porpoise skull, beef bones and hair, and a large piece from the side of head and gills of an 11 ft. Hammerhead taken in the net with it.

The stomachs of four Tiger Sharks, July 13, contained Black-tip Sharks (*C. limbatus*) bitten in large pieces, some about in half.

Two about 10 feet long taken July 16 contained, respectively, a large amount of horseshoe crab shells, and three or four small Hammerheads and the part of a sea turtle. One of these also had some of the net in its stomach.

Two between 11 and 12 feet long, July 17; one contained digested remains of a fairly good sized shark, also some pieces of turtle, but no fresh food; the other contained pieces of sea turtle, several crabs and some fish.

An 11-ft. female, July 29, contained several large pieces of bone, a large amount of turtle shell, and the jaws of a loggerhead turtle.

A twelve-foot two-inch female (weight 630 lbs.), July 31, contained a large shark of about eight or nine feet bitten in seven or eight pieces.

An eleven-foot male (450 lbs.), August 5, contained a small Hammerhead of about 3½ feet, intact, and several parts of other sharks. And a small Tiger Shark on this same date was landed on the dock still alive, and vomited several small mammal bones; leg-

bones of some sheep have since been identified among them.

On the other hand, two females, 10 ft., 6 in., and 9 ft. 10 in. long, both from the same net, August 6, contained respectively mackerel and a large amount of crabs; and large pieces of probably Black-tip Shark and several small fish.

A male, 11 ft. 7 in. long (553 lbs.), August 10, contained partly digested turtle meat, part of the shell of a sea turtle, also a large number of soft-shell crabs, not digested, and other small food fish.

Six Tiger Sharks averaging 11 feet, or over, August 12, all contained large pieces of porpoise. In the nets at the same time were six porpoises, one with its whole side bitten out, another with only the tail and about six inches of the body left, and so forth. Only two were intact. All the porpoises were in the same net, but some of the sharks were caught in another net 400 yards or so away.

Three Tiger Sharks between 10½ and 11½ feet long, August 13; two of them contained large pieces of *Mobula*, the other a number of soft-shell crabs, part of a Whip Ray, and several shad.

August 16. Of four Tiger Sharks averaging about 11 ft. in length, one large female contained a loggerhead turtle intact; another, parts of a loggerhead. Several loggerheads were caught in the same net, some badly mutilated.

August 18, seven Tiger Sharks contained shad, crabs and a large amount of mackerel. One large one had a large Whip Ray inside in about three pieces, another bones and feathers of waterfowl and the head of a *Mobula*; others were full of small fish all fresh.

It will be seen that the above record covers 34 individual Tiger Sharks. Of these thirteen contained crabs, horseshoe crabs, mackerel, shad and other fish, remains of waterfowl (one); two contained mammal bones (probably taken in the role of scavenger); and 26 such large food as sea turtle, other sharks, *Mobula*

and Whip Ray, and porpoise. Apparently the porpoise, and the other sharks, for the most part, were captured by them in the nets. It is doubtful if they could secure the former or nearly so large a proportion of the latter, otherwise.

J. C. BELL,  
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### OLIGODON ROUXI, A NEW NAME FOR OLIGODON ORNATUS ROUX

It has apparently escaped notice that the name *Oligodon ornatus* Roux, given to a new species of snake from Sumatra, *Revue Suisse de Zoologie*, Vol. 22, pp. 28, 29, 1914, is preoccupied by *Oligodon ornatus* Van Denburgh, *Proceedings of the California Academy of Sciences*, Vol. III, p. 53, 1909, applied to a Formosan species. The Sumatran species may be known hereafter as *Oligodon rouxi*, nom. nov.

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### AMPHIBIAN NOTES FROM DADE CO., FLORIDA

The following species of Amphibians were observed from February 23 to December 8, 1920:—

*Rana grylio* Stejneger, was heard grunting on April 4 at Musa Isle, near the meeting of the north and south forks of the Miami River, also in the canal near there. No effort was made to take specimens, as it is impossible to secure living material during the daytime, and without a boat, the species being so thoroughly aquatic and exceedingly shy.

*Rana sphenocephala* (Cope.) The writer had been expecting to hear the calls of the Southern Leopard Frog, but none were heard during or after any of the heavy rains of May and June. During the night of